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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/582,913	06/14/2006	Koji Kamei	Q79149	8725

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EXAMINER	
WILSON, SCOTT R	

ART UNIT	PAPER NUMBER
2826	

MAIL DATE	DELIVERY MODE
08/01/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/582,913	KAMEI, KOJI	
	Examiner	Art Unit	
	SCOTT R. WILSON	2826	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *20 February 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *26-51* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *26-51* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *14 June 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *6/14/06*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Specification

The abstract of the disclosure is objected to because it comprises more than one paragraph. Correction is required. See MPEP § 608.01(b).

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 26-49 are rejected under 35 U.S.C. 102(b) as being anticipated by Uemura et al. (US 2004/0149999 A1). As to claim 26, Uemura et al., Figure 1, discloses a gallium nitride-based (paragraph [0015]) compound semiconductor light-emitting device comprising an n-type semiconductor layer (13)(paragraph [0039]) of a gallium nitride-based compound semiconductor, a light-emitting layer (14) of a gallium nitride-based compound semiconductor and a p-type semiconductor layer (15) of a gallium nitride-based compound semiconductor formed on a substrate in this order, and having a negative electrode (21n) and a positive electrode (20p)(paragraph [0052]) provided on the n-type semiconductor layer and the p-type semiconductor layer, respectively; wherein the negative electrode comprises a bonding pad layer (21b) and a contact metal layer (19n) which is in contact with the n- type semiconductor layer, and the contact metal layer may be composed of a Cr-Al alloy (paragraph [0027]). Uemura et al. discloses (paragraph [0027] and [0052]) that an "n-side electrode" may be formed as a Cr-Al alloy, and that an "n-side electrode film", embodied as a laminate of layers (21a) and (21b), may be formed on the n-side electrode, thereby expressly teaching that the n-side electrode layer is layer (19n).

As to claim 27, Uemura et al. discloses (paragraph [0027]) that the contact metal layer may be composed of a Cr-Al alloy (paragraph [0027]). A Cr content of from 10 to 90 mass % is understood in the art to be within the scope of being an alloy.

As to claim 28, Uemura et al. discloses (paragraph [0027]) that the contact metal layer may be composed of a Cr-Al alloy (paragraph [0027]). A Cr content of from 20 to 80 mass % is understood in the art to be within the scope of being an alloy.

As to claim 29, Uemura et al. discloses (paragraph [0027]) that the contact metal layer may be composed of a Cr-Al alloy (paragraph [0027]). A Cr content of from 40 to 60 mass % is understood in the art to be within the scope of being an alloy.

As to claim 30, Uemura et al. discloses (paragraph [0032]) that the contact metal layer, described by the term "starting layer" has a thickness preferably in the range of from 5 nm to 50 nm.

As to claim 31, Uemura et al. discloses (paragraph [0032]) that the contact metal layer, described by the term "starting layer" has a thickness preferably in the range of from 5 nm to 50 nm.

As to claim 32, Uemura et al. discloses (paragraph [0031]) that the bonding pad layer, described by the term "upper layer", may be Au or an Au alloy.

As to claim 33, Uemura et al. discloses (paragraph [0032]) that the bonding pad layer, described by the term "upper layer" has a thickness preferably in the range of from 300 nm to 3000 nm.

As to claim 34, Uemura et al. discloses (paragraph [0032]) that the bonding pad layer, described by the term "upper layer" has a thickness preferably in the range of from 300 nm to 3000 nm.

As to claim 35, Uemura et al. discloses (paragraphs [0027] and [0031]) that an AuSn alloy layer may be provided on the bonding pad layer.

As to claim 36, Uemura et al. discloses (paragraph [0032]) that the bonding pad layer, which may include the AuSn alloy layer, may be from 100 nm to 50 μm in thickness.

As to claim 37, Uemura et al. discloses (paragraphs [0027] and [0031]) that an AuSn alloy layer, which is within the scope of being a lead free solder layer, may be provided on the bonding pad layer.

As to claim 38, Uemura et al. discloses (paragraph [0032]) that the bonding pad layer, which may include the AuSn alloy layer, which is within the scope of being a lead free solder layer, may be from 100 nm to 50 μm in thickness.

As to claim 39, Uemura et al. discloses (paragraph [0031]) that an adhesion layer (21a), described by the term "starting layer", may be formed between the contact metal layer (19n) and the bonding pad layer (21b), and may be formed of Ti.

As to claim 40, Uemura et al. discloses (paragraph [0032]) that the adhesion layer (21a) has a thickness preferably in the range of from 5 nm to 50 nm.

As to claim 41, Uemura et al. discloses (paragraph [0032]) that the adhesion layer (21a) has a thickness preferably in the range of from 5 nm to 50 nm.

As to claim 42, Uemura et al., Figure 1, discloses that the adhesion layer and barrier layer may be the same layer (21a).

As to claim 43, Uemura et al. discloses (paragraph [0031]) that a barrier layer (21a), described by the term "starting layer", may be formed between the bonding pad layer and the AuSn alloy layer.

As to claim 44, Uemura et al. discloses (paragraph [0031]) that a barrier layer (21a), described by the term "starting layer", may be formed between the bonding pad layer and the AuSn alloy layer, which is within the scope of being a lead free solder layer.

As to claim 45, Uemura et al. discloses (paragraph [0031]) that the barrier layer, described by the term "starting layer" may be formed from Ti, W, Ta and Zr or an alloy thereof.

As to claim 46, Uemura et al. discloses (paragraph [0031]) that the barrier layer, described by the term "starting layer" may be formed from Ti, W or Ta or an alloy thereof.

As to claim 47, Uemura et al. discloses (paragraph [0032]) that the barrier layer (21a) ("starting layer") has a thickness in the range of from 1 nm to 100 nm.

As to claim 48, Uemura et al. discloses (paragraph [0032]) that the barrier layer (21a) ("starting layer") has a thickness in the range of from 1 nm to 100 nm.

As to claim 49, Uemura et al. discloses (Abstract) that the light-emitting device is of a flip-chip type.

Claims 50 and 51 are rejected under 35 U.S.C. 102(b) as being anticipated by Uemura et al.. As to claim 50, Uemura et al., Figure 1, discloses a negative electrode for use in a gallium nitride-based compound semiconductor light-emitting device comprising a bonding pad layer (21b) and a contact metal layer (19n) which is in contact with the n-type semiconductor layer, and the contact metal layer may be composed of a Cr-Al alloy (paragraph [0027]). Uemura et al. discloses (paragraph [0027] and [0052]) that an "n-side electrode" may be formed as a Cr-Al alloy, and that an "n-side electrode film", embodied as a laminate of layers (21a) and (21b), may be formed on the n-side electrode, thereby expressly teaching that the n-side electrode layer is layer (19n).

As to claim 51, Uemura et al. discloses (Abstract) that the light-emitting device is of a flip-chip type.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Scott R. Wilson whose telephone number is 571-272-1925. The examiner can normally be reached on M-F 8:30 - 4:30 Eastern.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sue Purvis can be reached on 571-272-1236. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

srw
July 31, 2008

/Evan Pert/

Primary Examiner, Art Unit 2826